

alternative splicing regulatory protein; and

interacting the polynucleotide sequences to the alternative splicing regulatory protein within the cell, wherein the polynucleotide sequences compete with at least one endogenous RNA sequence for interacting with the alternative splicing regulatory protein.

2. The method of Claim 1, wherein the polynucleotide sequences are introduced into the cell by electroporation.

3. The method of Claim 1, wherein the polynucleotide sequences are introduced into the cell by applying the polynucleotide sequences to a surface of the cell.

4. The method of Claim 3, wherein the polynucleotide sequences are packaged in at least one liposome.

5. The method of Claim 3, wherein the polynucleotide sequences are applied to a surface of the cell along with a detergent.

6. The method of Claim 1, wherein the cell is at least one tissue culture cell.

7. The method of Claim 1, wherein the cell is at least one non-human cell.

8. The method of Claim 1, wherein the cell is at least one non-human mammalian cell.

9. The method of Claim 1, wherein the cell is at least one avian cell.

10. The method of Claim 1, wherein the cell is at least one non-human tissue culture cell.

11. The method of Claim 1, wherein the polynucleotide sequences further comprise at least one isolated and purified RNA molecule.

A 1

12. The method of Claim 1, wherein the polynucleotide sequences further comprise at least one synthetic RNA molecule.

13. The method of Claim 1, wherein the polynucleotide sequences further comprise at least one synthetic RNA analog.

14. The method of Claim 1, wherein the polynucleotide sequences are single-stranded.

15. The method of Claim 1, wherein the step of interacting the polynucleotide sequences to the alternative splicing regulatory protein further comprises regulating the activity of the alternative splicing regulatory protein.

A 2

21. The method of Claim 1, further comprising the step of determining an effect on RNA processing by at least one resulting phenotypic characteristic of the cell.

29. A method of modifying an activity of at least one hnRNP A1 protein within at least one cell comprising:

introducing into the cell a plurality of sequences capable of binding to the hnRNP A1 protein; and

A 3 interacting the polynucleotide sequences to the hnRNP A1 protein within the cell, wherein the polynucleotide sequences compete with at least one endogenous RNA sequence for interacting with the hnRNP A1 protein.

30. The method of Claim 29, further comprising the step of determining an effect on RNA processing by at least one resulting phenotypic characteristic of the cell.

Please add the following new claims:

A 4 55. The method of Claim 1, wherein the polynucleotide sequences comprise a plurality of sequences from an mRNA wherein the sequences from the mRNA are intronic splicing silencers, intronic splicing enhancers, exonic splicing silencers or exonic splicing enhancers.

56. The method of Claim 1, wherein the alternative splicing regulatory protein is selected from the group consisting of hnRNP A/B protein, hnRNP A protein, hnRNP B protein, and hnRNP A1 protein.

57. A method of modifying an activity of at least one alternative splicing regulatory

protein within at least one cell, which comprises the steps of:

introducing into the cell a plurality of polynucleotide sequences comprising at least one intronic splicing silencer; and

interacting the polynucleotide sequences to the alternative splicing regulatory protein within the cell, wherein the polynucleotide sequences compete with at least one endogenous RNA sequence for interacting with the alternative splicing regulatory protein.

A4
58. The method of Claim 57, wherein the alternative splicing regulatory protein is selected from the group consisting of hnRNP A/B protein, hnRNP A protein, hnRNP B protein, and hnRNP A1 protein.

59. A method of modifying an activity of at least one alternative splicing regulatory protein within at least one cell, which comprises the steps of:

introducing into the cell a plurality of polynucleotide sequences comprising at least one intronic splicing enhancer; and

interacting the polynucleotide sequences to the alternative splicing regulatory protein within the cell, wherein the polynucleotide sequences compete with at least one endogenous RNA sequence for interacting with the alternative splicing regulatory protein.

60. The method of Claim 59, wherein the alternative splicing regulatory protein is selected from the group consisting of hnRNP A/B protein, hnRNP A protein, hnRNP B

protein, and hnRNP A1 protein.

61. A method of modifying an activity of at least one alternative splicing regulatory protein within at least one cell, which comprises the steps of:

introducing into the cell a plurality of polynucleotide sequences comprising at least one exonic splicing silencer; and

interacting the polynucleotide sequences to the alternative splicing regulatory protein within the cell, wherein the polynucleotide sequences compete with at least one endogenous RNA sequence for interacting with the alternative splicing regulatory protein.

A4

62. The method of Claim 61, wherein the alternative splicing regulatory protein is selected from the group consisting of hnRNP A/B protein, hnRNP A protein, hnRNP B protein, and hnRNP A1 protein.

63. A method of modifying an activity of at least one alternative splicing regulatory protein within at least one cell, which comprises the steps of:

introducing into the cell a plurality of polynucleotide sequences comprising at least one exonic splicing enhancer; and

interacting the polynucleotide sequences to the alternative splicing regulatory protein within the cell, wherein the polynucleotide sequences compete with at least one endogenous RNA sequence for interacting with the alternative splicing regulatory protein.